

Sr. Controls Engineer

Leading Edge Crystal Technologies, Inc.
Boston Area

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Company Overview

Leading Edge Crystal Technologies (LECT) is revolutionizing semiconductor wafer manufacturing. We are commercializing the first single crystal direct wafer manufacturing process with a dramatically lower-cost, high performance advantage over the 70-year-old incumbent technology. In the largest global wafer market of solar photovoltaics (solar PV), the LECT process can generate over \$15BN of annual value and eliminate over 1 GT/year of greenhouse gas (GHG) emissions in the manufacturing process. After a decade of technology development and over 100 patents, LECT is developing this technology for a commercial pilot and market entry in 2022.

LECT was formed in 2018 as a technology spin-out from Applied Materials. Development has been financed by federal grants (>\$4.7M) and private venture capital (DSM Venturing and Clean Energy Venture Fund). As a team of 10, we have operated out of the Gloucester Applied Materials campus and will be moving into a new facility nearby north metro Boston.

LECT is a fast-paced, agile environment. We are growing and plan to add seven new team members by February 2020. Team members wear many hats and we expect them to take initiative and ownership from day one. Strong communication and disciplined organizational skills are critical in this collaborative environment, as well as a passion for commercializing next-gen, high impact technologies.

Scope of Role:

LECT is seeking a Senior Controls Engineer to develop, design and test, and interface development of electrical control systems including digital and analog systems. This role involves designing original test setups for ongoing technology development, troubleshooting existing electrical control equipment, and designing the architecture for future tool series. The Sr. Controls Engineer will work with a strong mechanical team and mentor junior Engineers and Technicians. First year projects include:

- Design through implementation of test setup for measuring micro jet flow performance
- Design through implementation of an inline thickness profile scanner
- Integration of a ribbon motion and laser singulation system onto the Leading Edge tool
- Troubleshooting and developing new features for a working PLC
- Design of industrial tool controls architecture

Essential Duties and Responsibilities:

- Provide hardware and P&ID design as required for controls systems including power distribution, electromagnetics, I/O requirements, communication requirements, field wiring, fluid requirements.
- Provide software design as required for controls systems including PLC logic development or PC based control programming, HMI development, management information system requirements
- Perform pre-approval checks on hardware and software designs before submittal
- Provide start-up/debug assistance during build and tryout
- Support execution of testing operations in an accurate and efficient manner. Define project requirements, including deliverables and constraints, designing and developing a solution and conducting necessary activities to confirm and validate solution.
- Lead or assist on special projects to determine, develop and implement new technologies for future growth in capabilities and offerings.

- Develop new applications and test procedures; ensure conformity to standards, procedures, and regulatory requirements; and that they are under configuration control.
- Maintain engineering data, documentation and/or drawings. Ensure designs and data/analyses/drawings are accurate, integrated, clearly communicated and complete.
- Review and prepare reports, proposals, and presentations analyzing customer technical requirements and recommend solutions beneficial to the customer.
- Provide technical guidance to personnel involved in developing design approaches and executing test procedures. Review and correct drawings to ensure proper engineering techniques. Support day-to-day operations.
- Work with team to develop standard methods and designs for better efficiency and operation

Required Skills & Qualifications

- Bachelors of Science degree in Electrical, Control Systems Engineering, or related discipline. Advanced degrees preferred.
- 7+ years experience in Electrical, Control Systems Engineering or related discipline
- Experience with test system automation.
- Background in the design of complex analog and digital control circuits.
- Strong understanding of electrical or hydraulic motion control systems, familiarity with motor drives, and hydraulic motion controls.
- Advanced knowledge of PID control algorithms, including nested PID's, noise reduction strategies, and ultra-precision control techniques at temperatures above 1400 degrees Celsius
- Fluency with an industry-standard controls software development package (Siemens, Ignition, Allen Bradley)

Benefits

LECT offers highly competitive salaries, excellent benefits, and unparalleled growth and development opportunities -- all to create a compelling and rewarding work environment.

LECT is an Affirmative Action and Equal Opportunity Employer and all qualified applicants will receive consideration for employment without regard to race, color, religion, gender, sexual orientation, national origin, genetic information, age, disability, veteran status, or any other legally protected basis.

Agency

LECT does not accept unsolicited agency resumes and will not pay fees to any third-party agency or firm that does not have a signed agreement with LECT.

Seniority Level

Manager

Industry

Manufacturing Systems and Equipment

Employment Type

Full-time

Job Functions

Controls Design, Analysis & Maintenance